

Claims:

1. (withdrawn) A video encoding method for video encoding apparatus to implement backward interframe prediction from a temporally subsequent frame, the video encoding method comprising:

outputting information indicating that an option to eliminate use of a decoded image of the temporally subsequent frame was chosen.

2. (withdrawn) A video decoding method for video decoding apparatus to implement backward interframe prediction from a temporally subsequent frame, said video decoding method comprising:

in conjunction with input of information for eliminating use of a decoded image of the temporally subsequent frame, avoiding outputting the decoded image of the frame on the basis of said information.

3. (withdrawn) A video encoding apparatus for implementing backward interframe prediction from a temporally subsequent frame, said video encoding apparatus being configured to:

output information indicating that an option to eliminate use of a decoded image of the temporally subsequent frame was chosen.

4. (withdrawn) The video encoding apparatus according to Claim 3, wherein said information is information providing an instruction to eliminate use of every frame, for the decoded image of said temporally subsequent frame.

5. (withdrawn) The video encoding apparatus according to Claim 3, wherein said information is information providing an instruction to eliminate use of every frame not used as a reference frame for backward prediction, for the decoded image of said temporally subsequent frame.

6. (withdrawn) The video encoding apparatus according to Claim 3, wherein said information includes information indicating an output time about a decoded image of a frame use of which is eliminated.

7. (withdrawn) A video decoding apparatus for implementing backward interframe prediction from a temporally subsequent frame, said video decoding apparatus being configured to:

in conjunction with input of information for eliminating use of a decoded image of the temporally subsequent frame, avoid outputting the decoded image of the frame on the basis of said information.

8. (withdrawn) The video decoding apparatus according to Claim 7, wherein said information is information providing an instruction to eliminate use of every frame, for the decoded image of said temporally subsequent frame.

9. (withdrawn) The video decoding apparatus according to Claim 7, wherein said information is information providing an instruction to eliminate use of every frame not used as a reference frame for backward prediction, for the decoded image of said temporally subsequent frame.

10. (withdrawn) The video decoding apparatus according to Claim 7, wherein said information includes information indicating an output time about a decoded image of a frame use of which is eliminated.

11-12. (cancelled)

13. (currently amended) A video encoding apparatus comprising:

an input means-module for effecting input of an imageframes of pictures as a target for encoding;

an encoding meansencoder for encoding the image-frames of pictures to generate encoded data;

an image storage means for storing, ~~from an image~~ pictures regenerated reproduced after encoded by the ~~encoding encoder means~~, at least one reference frame for use in subsequent encoding and at least one output queuing frame whose output time for display is yet to come; and

a buffer management means ~~manager~~ for managing ~~every image~~ all the pictures stored in the image storage means,

wherein, ~~when an IDR picture is encoded on the occasion of encoding an image encoded without reference to any other image,~~ the buffer management means ~~manager~~ outputs, along with the encoded data IDR picture, a flag indicating whether to delete the at least one reference frame stored or both the at least one reference frame and the at least one output queuing frame ~~use is eliminated of every image previously stored in the image storage means.~~

14. (currently amended) The video encoding apparatus according to Claim 13, wherein the ~~encoding means~~ encoder implements backward interframe prediction from a ~~temporally subsequent~~ future frame, and

wherein, ~~on the occasion of encoding the image encoded without reference to any other image~~ when the IDR picture is encoded, the buffer management means ~~manager~~ deletes, based on the flag, a decoded image frame of every temporally subsequent frame previously stored in the image storage means which is further future than the IDR picture and will not be used as a reference frame in the backward interframe prediction.

15. (currently amended) A video decoding apparatus comprising:

an input means ~~module~~ for effecting input of ~~image data~~ picture data containing encoded data of ~~an encoded image~~ representing a sequence of pictures, and ~~an image~~ a picture output instruction flag added to the encoded data;

a decoding decoder means for decoding the encoded data to generate a ~~regenerated image~~ reproduced pictures;

an image storage means for storing, from the regenerated-reproduced image pictures, at least one reference frame for use in subsequent decoding and at least one output queuing frame whose output time for display is yet to come; and

a buffer management meansmanager for managing every regenerated imagethe at least one reference frame and the at least one output queuing frame stored in the image storage means,

wherein when an IDR picture is decoded, a picture output instruction flag corresponding to which is equal to "1", the buffer management meansmanager deletes the at least one reference frame and the at least one output queuing frame every image stored in the image storage means, in accordance with the image output instruction flag corresponding to an image encoded without reference to any image stored in the image storage means.

16. (currently amended) The video decoding apparatus according to Claim 15, wherein where-if the image-picture output instruction flag is equal to "0," use is eliminated of every reference image in a buffer, and where the flag is "1," everythe buffer manager deletes the at least one reference frame stored in the image storageand every output queuing image in the buffer are deleted.

17. (currently amended) A video encoding method comprising the steps of:

an input step wherein a video encoding apparatus effectseffecting input of an imageframes of pictures as a target for encoding;

an encoding step wherein the video encoding apparatus encodesencoding the imageframes of pictures to generate encoded data;

an image storage step wherein the video encoding apparatus storesstoring in an image storage, from an imagepictures regenerated-reproduced after encoded in the encoding step, at least one reference frame for use in subsequent encoding and at least one output queuing frame whose output time for display is yet to comeinto image storage means; and

~~a buffer management step wherein the video encoding apparatus manages~~
~~managing every image~~the at least one reference frame and the at least one output
~~queuing frame stored in the image storage means,~~

~~wherein in the buffer management step, on the occasion of encoding an image~~
~~encoded without reference to any other image~~when an IDR picture is encoded, the
~~video encoding apparatus~~the managing step comprises ~~outputs~~ outputting, along with
the encoded data IDR picture, a flag indicating whether ~~use is eliminated of every~~
~~image~~to delete the at least one reference frame or both the at least one reference frame
~~and the at least one output queuing frame~~ previously stored in the image storage
~~means.~~

18. (currently amended) A video decoding method comprising the steps of:

~~an input step wherein a video decoding apparatus effects~~ effecting input of image
~~picture data containing encoded data of an encoded image~~ representing a sequence of
~~pictures,~~ and ~~an image~~ a picture output instruction flag added to the encoded data;

~~a decoding step wherein the video decoding apparatus decodes~~ decoding the
encoded data to generate ~~a regenerated image~~ reproduced pictures;

~~an image storage step wherein the video decoding apparatus stores~~ storing the
~~regenerated image into~~ in an image storage means, from the reproduced pictures, at
least one reference frame for use in subsequent decoding and at least one output
queuing frame whose output time for display is yet to come; and

~~a buffer management step wherein the video decoding apparatus manages~~
~~managing every regenerated image~~ the at least one reference frame and the at least
one output queuing frame stored in the image storage means,

wherein when an IDR picture is decoded, a picture output instruction flag
corresponding to which is equal to "1", in the buffer management ~~managing~~ step
comprises, ~~the video decoding apparatus deletes~~ deleting every image the at least one
reference frame and the at least one output queuing frame stored in the image storage
means, ~~in accordance with the image output instruction flag corresponding to an image~~
~~encoded without reference to any image stored in the image storage means.~~

19-20. (cancelled)

21. (new) A decoding apparatus for decoding encoded pictures and outputting the decoded pictures, comprising:

- a decoder configured to perform an inter prediction on the encoded pictures, using at least one reference picture selected from the decoded pictures;

- at least one decoded picture buffer in which the decoded pictures are storable, wherein the decoded pictures storable in the at least one decoded picture buffer comprise the at least one reference picture and at least one non-reference picture held for future output;

- an IDR picture identifier configured to identify an IDR picture among the decoded pictures and determine a value of a flag attached to the IDR picture; and

- a picture remover responsive if the decoded picture is an IDR picture to empty the at least one decoded picture buffer, when the determined value of the flag so dictates, without outputting the stored pictures therefrom.

22. (new) A decoding apparatus according to claim 21, wherein if the decoded picture is an IDR picture, the picture remover acknowledges the at least one reference picture stored in the at least one decoded picture buffer as no longer needed for reference and removes same from the at least one decoded picture buffer.

23. (new) A method for decoding encoded pictures and outputting the decoded pictures, comprising:

- performing an inter prediction to decode the encoded pictures, using at least one reference picture selected from the decoded pictures;

- storing in at least one decoded picture buffer the at least one reference picture and at least one non-reference picture held for future output;

- identifying an IDR picture among the decoded pictures and determining a value of a flag attached to the IDR picture; and

if the decoded picture is an IDR picture, emptying the at least one decoded picture buffer, when the determined value of the flag so dictates, without outputting the stored pictures therefrom.

24. (new) A method according to claim 23, further comprising acknowledging, if the decoded picture is an IDR picture, the at least one reference picture stored in the at least one decoded picture buffer as no longer needed for reference and removing same from the at least one decoded picture buffer.

25. (new) An encoding apparatus, comprising:

- an encoder configured to encode a series of pictures, using at least one reference picture selected from the series of pictures;

- an IDR picture identifier configured to identify an IDR picture among the series of pictures;

- a flag generator configured to determine, if an IDR picture is identified, whether to empty a decoded picture buffer of a decoder or only delete any reference picture stored in the decoded picture buffer, leaving any other picture stored therein, and generate a flag having a value indicative of a determined result; and

- a flag adder configured to add the generated flag to the encoded IDR picture.

26. (new) A encoding method comprising:

- encoding a series of pictures, using at least one reference picture selected from the series of pictures;

- identifying an IDR picture among the series of pictures;

- if an IDR picture is identified, determining whether to empty a decoded picture buffer of a decoder or only delete any reference picture stored in the decoded picture buffer, leaving any other picture stored therein;

- generating a flag having a value indicative of a determined result; and

- adding the flag to the encoded IDR picture.